

CLAIMS

1. A roller screw comprising:

a screw shaft having an outer peripheral surface in which a spiral roller rolling groove is formed;

a nut member having an inner peripheral surface in which a spiral loaded roller rolling groove is formed so as to oppose to the roller rolling groove of the screw shaft;

a return member connecting one and another ends of a loaded roller rolling groove of the nut member and configured to circulate a roller rolling the loaded roller rolling passage between the roller rolling groove of the screw shaft and the loaded roller rolling groove of the nut member; and

a plurality of rollers disposed in the loaded roller rolling passage and the return member,

wherein a spacer is disposed between a pair of adjacent rollers so as to prevent the paired rollers from contacting each other.

2. The roller screw according to claim 1, wherein the spacer is formed with concave portions at both ends in an advancing direction thereof so as to contact an outer peripheral surface of the roller, and the roller contacts the concave portions along an entire length in the axial direction thereof.

3. The roller screw according to claim 2, wherein a pair of axes of the rollers are disposed in a pair of planes substantially parallel with each other in a state that the paired rollers disposed at both the ends in the advancing direction contact the concave portions of the spacer.

4. The roller screw according to claim 2 or 3, wherein an intersecting portion of the concave portion of the spacer and a surrounding surface portion of the space except the concave portion is chamfered so as to perform a smooth circulation of the spacer.
5. The roller screw according to any one of claims 1 to 4, wherein the return member includes a central portion extending linearly and a pair of end portions bent on both sides of the central portion, front end portions of the end portions are disposed in a tangential direction of the loaded roller rolling passage as viewed from the axial direction of the screw shaft and are inclined in a lead angle direction of the loaded roller rolling passage as viewed from a side of the screw shaft.
6. The roller screw according to any one of claims 1 to 5, wherein a loaded roller rolling passage having a square section is formed between the roller rolling groove of the screw shaft and the loaded roller rolling groove of the nut member, and axes of a pair of adjacent rollers are perpendicular to each other as viewed from a roller advancing direction.